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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,055	11/19/2003	Sung-Tae Kim	5000-1-491	7211

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EXAMINER

LE, THI Q

ART UNIT PAPER NUMBER

2613

DATE MAILED: 10/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5/1

Office Action Summary	Application No. 10/717,055	Applicant(s) KIM ET AL.	
	Examiner Thi Q. Le	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Specification

2. The abstract of the disclosure is objected to because it contains more than 150 words. Correction is required. See MPEP § 608.01(b).
3. The disclosure is objected to because of the following informalities:
 - a) On page 4 line 1 of the specification, insert --third-- after "CIR21 143 has first through".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. **Claims 3, 9 and 11** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. **Claim 3 line 5**, the applicant claims an optical multiplexer/demultiplexer connected to the first, it is unclear what "**the first**" is referring to.
7. **Claim 9** recites the limitation "**the second circulator**" in line 6. There is insufficient antecedent basis for this limitation in the claim.

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8. **Claim 11** recites the limitation "**the second circulator**" in **line 3**. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

10. **Claims 1, 3-4, 6-8 and 9-10** are rejected under 35 U.S.C. 102(b) as being anticipated by **Bergmann (US Patent # 6,240,222)**.

Consider **claim 1**, Bergmann clearly shows and discloses, an add/drop module (read as, apparatus 210; figure 5) connected to an optical signal for transmitting a multiplexed optical signal in a wavelength division multiplexing optical transmission system, and adapted to add drop a channel for the optical signal, comprising: a first circulator (read as, circulator 212) having first through third ports (read as, ports 212a-c) that are both connected to an optical fiber, the first circulator outputting an optical signal, input to the first port (read as, port 212b), to the second port (read as, port 212c), and outputting an optical signal, input to the second port (read as, port 212c), to the third port (read as, port 212b) (figure 5); an optical multiplexer/demultiplexer (read as, multiplexer/demultiplexer 214) having a multiplexing port connected to the second port (read as, port 212c) of the first circulator, and adapted to provide a passage for the optical signal, and a plurality of demultiplexing ports (read as, ports 201-207) respectively adapted to provide passages for demultiplexed channels of the optical signal; and a plurality of add/drop units (read as, 221 and 227; figure 5, column 7 lines 36-56) each including

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a second circulator (read as, circulator 270; figure 7A) having first through third ports (read as, port 201 and 270a-b), a second port (read as, port 201) of the second circulator being connected to an associated one of the demultiplexing ports, the second circulator outputting a channel, input to the second port (read as, port 201) , to the third port (read as, port 270a) and outputting a channel, input to the first port (read as, port 270b), to the second port, and an

optical switch (read as, switch 280) having first through fourth ports (read as, ports 280a-d) while being connected at the first port (read as, port 280a; figures 7B-C) to the third port of the second circulator, and at the third port (read as, port 280c) to the first port of the second circulator, the first port of the optical switch being selectively connected either the third port of the optical switch to establish a path for a channel to be passed or the fourth port (read as, port 280b) of the optical switch to establish a path for a channel to be dropped, the second port (read as, port 280d) of the optical switch being selectively connected with the third port of the optical switch to establish a path for a channel to be added (abstract; figures 5 and 7; column 7 lines 36-56; column 7 lines 58-67 and column 9 lines 1-60).

Consider **claim 3**, Bergmann clearly shows and discloses, an add/drop module (read as, apparatus 210; figure 5) for a wavelength division multiplexing optical transmission system, comprising: a first circulator (read as, circulator 212) having a plurality of ports (read as, ports 212a-c), the first circulator being connected to an optical fiber (read as, port 212b is connected to an optical fiber; column 6 lines 20-25); an optical multiplexer/demultiplexer (read as, multiplexer/demultiplexer 214) connected to the first; and at least two add/drop units (read as, 221 and 227; figure 5, column 7 lines 36-56) each including a second circulator (read as, circulator 270; figure 7A) having a plurality of ports, at least one port (read as, port 201) being

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connected to a demultiplexing port of the optical multiplexer/demultiplexer, and an optical switch (read as, switch 280) having a plurality of ports (read as, ports 280a-d; figure 7B-C), two ports being connected to respective ports of the second circulator (read as, ports 280a and 280c are connected to port 270a and 270b; figure 7A), another port (read as, port 280b) of the optical switch being selectively connectable to either establish a path for a channel to be passed or to establish a path for a channel to be dropped (abstract; figures 5 and 7; column 7 lines 36-56; column 8 lines 58-67 and column 9 lines 1-10).

Consider **claim 4, and as applied to claim 3 above**, Bergmann further discloses, wherein the add/drop unit also include a further port (read as, port 280d; figure 7A) of the optical switch that is selectively connectable to establish a path for a channel to be added (figure 7; column 8 lines 58-67 and column 9 lines 1-10).

Consider **claim 6, and as applied to claim 3 above**, Bergmann further discloses, wherein the first circulator includes first through third ports (read as, ports 212a-c) that are both connected to the optical fiber (column 6 lines 20-25), the first circulator outputting an optical signal, input to the first port (read as, port 212 b), to the second port (read as, port 212c), and outputting an optical signal, input to the second port, to the third port (read as, port 212a) (figure 5; column 7 lines 36-56).

Consider **claim 6, and as applied to claim 3 above**, Bergmann further discloses, wherein the optical multiplexer/demultiplexer includes a multiplexing port (read as, port 212c) connected to the second port of the first circulator, and adapted to provide a passage for the optical signal, and a plurality of demultiplexing ports (read as, port 201-207) respectively adapted to provide passages for demultiplexed channels of the optical signal (figure 5; column 7 lines 36-56).

Consider **claim 8, and as applied to claim 6 above**, Bergmann further discloses, wherein the second circulator includes first through third ports (read as, ports 201 and 270a-b), a second port (read as, port 201) of the second circulator being connected to an associated one of the demultiplexing ports, the second circulator outputting a channel, input to the second port, to the third port (read as, port 270a) and outputting a channel, input to the first port (read as, port 270b), to the second port (figure 7A; column 8 lines 58-67 and column 9 lines 1-10).

Consider **claim 9**, Bergmann clearly shows and discloses, an add/drop unit (read as, apparatus 221; figure 7A) for an add/drop module for a wavelength division multiplexing optical transmission system, the add/drop unit comprising: a circulator (read as, circulator 270) having a plurality of ports (read as, ports 201 and 270a-b), at least one port (read as, port 201) being connectable to a demultiplexing port of an optical multiplexer/demultiplexer, and an optical switch (read as, optical switch 280) having a plurality of ports (read as, ports 280a-d), two ports (read as, ports 280a and 280c) being connected to respective ports of the second circulator, another port (read as, port 280b) of the optical switch being selectively connectable to either establish a path for a channel to be passed or to establish a path for a channel to be dropped (abstract; figure 7A; column 8 lines 58-67 and column 9 lines 1-10).

Consider **claim 10, and as applied to claim 9 above**, Bergmann further discloses, wherein the add/drop unit also include a further port (read as, port 280d; figure 7A) of the optical switch that is selectively connectable to establish a path for a channel to be added (figure 7; column 8 lines 58-67 and column 9 lines 1-10).

Consider **claim 10, and as applied to claim 9 above**, Bergmann further discloses, wherein the circulator includes first through third ports, a second port (read as, port 201) of the

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second circulator being connected to the demultiplexing port, the second circulator outputting a channel, input to the second port, to the third port (read as, port 270a) and outputting a channel, input to the first port (read as, port 270b), to the second port.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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14. **Claims 2 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bergmann (US Patent # 6,240,222)** in view of Caroli (US PGPub 2006/0228114).

Consider **claim 2 and 5, and as applied to claim 1 and 3, respectively, above**, Bergmann disclosed the invention as described above; except for, wherein the optical multiplexer/demultiplexer comprises a waveguide grating router.

In related art, Caroli discloses a wavelength-selective routing node for selectively add, drop or route incoming WDM signal. Further, Caroli discloses the use of a demultiplexer in the form of a waveguide grating router (figure 2; paragraph 0015).

It would have been obvious for a person of ordinary skill in the art at the time of the invention to incorporate the teachings of Caroli with Bergmann. Because a waveguide grating router is lower cost compare to other forms of multiplexer/demultiplexer unit. Thus, using a waveguide grating router as the multiplexing/demultiplexing unit can reduce the cost of the add/drop module.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Jones et al.; 6,281,998
- b) Lauder et al.; 2002/0105692
- c) Grasso et al.; 2002/0196495
- d) Shin et al.; 6,714,341
- e) Marom, Dan Mark; 6,950,609
- f) Persson, Ulf; 7,113,662

17. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

18. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Thi Le whose telephone number is (571) 270-1104. The Examiner can normally be reached on Monday-Friday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Thi Le



KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER